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(54) Title: REFRACTORY METAL POTS

(57) Abstract: The invention relates to a computer-implemented process for making a pot that involves: (a) cutting an ingot comprising a refractory metal component into a first work piece; (b) subjecting the first work piece to upset forging, and thereby forming a second work piece; (c) subjecting the second work piece to a first annealing step in a vacuum or an inert gas to a first temperature that is sufficiently high to cause at least partial recrystallization of the second work piece, and thereby forming an annealed second work piece; (d) forging-back the annealed second work piece by reducing the diameter of the second work piece, and thereby forming a third work piece; (e)subjecting the third work piece to upset forging, and thereby forming a fourth work piece; (f)forging back the fourth work piece by reducing the diameter of the fourth work piece, and thereby forming a fifth work piece; (g) subjecting the fifth work piece to a. second annealing step to a temperature that is sufficiently high to at least partially recrystallize the fifth work piece; (h) subjecting the fifth work piece to upset forging, and thereby forming a sixth work piece; (i)subjecting the sixth work piece to a third annealing step, and thereby forming an annealed sixth work piece; (j) rolling the annealed sixth work piece into a plate by subjecting the annealed sixth work piece to a plurality of rolling passes; wherein the annealed sixth work piece undergoes a reduction in thickness after at least one pass and the annealed sixth work piece is turned between at least one pass, and thereby forming a plate; and (k)deep drawing the plate into a pot, thereby forming the pot; in which a fourth annealing step is carried out either (1) after step (j) before step (k), or (2) after step (k). Dimensions of at least one work piece or plate suitable for processing into a pot are pre-determined with a computer-implemented finite element modeling assessment method so that at least one work piece in steps (b)-(j) or plate in step (k) has dimensions that are substantially similar to the dimensions determined by the computerimplemented finite element modeling assessment method.

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